



Case Study 19

PRB Tech Notes

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AmerenUE teams with Charah and Home Depot to market ash for concrete mix

Burning Powder River Basin (PRB) coal can be a curse or a blessing, depending on your attention to the details of plant design and operations. One disadvantage of PRB coal combustion is the abundance of bottom ash and fly ash generated as a by-product. Handling and properly disposing of the ash can be challenging and costly. Both kinds of ash have commercial value, however. Last year, the 2,400-MW Labadie Power Plant in Missouri burned about 11 million tons of PRB coal, generating about 200,000 tons of bottom ash, so they understand both the challenges and the profit opportunity.

In September, the largest of AmerenUE's coal-fired stations, Labadie, celebrated the first anniversary of the opening of a concrete packaging facility that is now recycling more than 60,000 tons of fly ash and bottom ash into 2 million bags of high-quality concrete mix every year.

Partners in Ash

The unique project is the product of a partnership among AmerenUE (www.ameren.com); the ash management specialist Charah, Inc. (www.charah.com); The Quikrete Companies; and The Home Depot (Figure 3). The concrete mix is prepared at the facility and packaged in recyclable, two-handled plastic bags from Charah. It is then distributed to Home Depot stores in the St. Louis metropolitan area for sale to customers under the Quikrete brand name.

The 60,000 tons of bottom ash being reused as a concrete aggregate represents less than half of Labadie's annual production. Ultimately, AmerenUE officials hope to recycle all of it.

In addition to the ash being used to make concrete mix, more than a year's worth of Labadie's bottom ash was used as structural fill for the state-of-the-art,



AmerenUE's Labadie Power Plant has four units that burn about 11 million tons of PRB coal a year and have a collective capacity of 2,400 MW. The plant, located 35 miles west of St. Louis, also generates about 200,000 tons of bottom ash a year. Courtesy: AmerenUE



The partnership of AmerenUE; Charah, Inc.; The Quikrete Companies; and The Home Depot just celebrated its first year of operation. Courtesy: Charah, Inc.



The facility is designed to recycle more than 60,000 tons of fly ash and bottom ash into 2 million bags of high-quality concrete mix. Courtesy: Charah, Inc.



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35,000-ft² packaging facility. Charah launched its first bottom ash/plastic packaging plant in Virginia, but the one in Missouri is the first in the U.S. on power plant property. Charah, Inc. annually processes 250,000 tons of bottom ash and markets it to the concrete block and concrete mix industries in North Carolina, South Carolina, Tennessee, Kentucky, and Virginia.

Because ash is not classified as a hazardous waste by the U.S. Environmental Protection Agency (EPA), Ameren and other coal-burning utilities have long reused it for various products and applications—such as blasting grit, roofing shingles, cement and concrete manufacturing, structural fill, and snow and ice control. “This is the best example yet of Ameren’s ongoing initiative to find beneficial uses for the materials that result from burning coal to generate electricity,” said R. Alan Kelley, Ameren’s senior vice president for generation.



*The concrete mix product is available in Home Depot stores in the St. Louis metropolitan area under the Quikrete brand name.
Courtesy: Charah, Inc.*

Bottom Ash is Tops

This July, the Missouri Waste Control Coalition presented AmerenUE with an Outstanding Achievement Award for the AmerenUE/Charah concrete packaging facility at Labadie Power Plant. The coalition is a 400-member, not-for-profit entity for citizens, businesses, and organizations concerned about the environmental impact of waste management and disposal.

Charah and Ameren are charter members of the U.S. EPA’s Coal Combustion Products Partnership (C2P2), which encourages beneficial use of coal by-products. In April 2005, Charah earned a prestigious C2P2 Innovation Award for its efforts to increase the amount of coal combustion products put to good use instead of being landfilled. Charah’s award was for its development of concrete mix and packaging.

“Charah’s packaging is the most exciting, powerful innovation in the bagged concrete industry in 70 years,” said Giles Bowman, merchandising vice president for building materials at Home Depot. “The sealed plastic bag is sturdy, and the two handles make it very easy for our customers to lift and carry. At the same time, this packaging is less likely to break than traditional paper bags.”

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